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Contents For December, 1935

	PAGE
A Prospecting Trip in Tasmania's Wild West. By P. Ormsby Lennon	177
Some Non-Typical Quartz Varieties. By Wm. C. McKinley	182
The Bolas De Plata Discovery of 1736. By Ronald L. Ives	183
The Crystal Peak Region Near Florissant, Colorado. By George M. White	184
Why Collect Rocks and Minerals? By S. C. Brown	188
The Amateur Lapidary. Conducted by J. H. Howard	189
"Odd Notes From the Shop" By R. Emmet Doherty	189
Minerals Oddities	189
Famous Mineralogist Gives Lecture. By Muriel J. Doherty	190
Acknowledgments	190
The Book of Minerals. Reviewed by H. Alban Anderson	191
A Peek At Our Mail	192
Collector's Kinks	192
Club and Society Notes	192
Upper Darby Jr. H. S. Mineral Club	192

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The Official Journal of the Rocks and Minerals Association

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WHOLE No. 54

A Prospecting Trip in Tasmania's Wild West

By P. ORMSBY LENNON

In 1925, prospectors found osmiridium at Adams River in Western Tasmania.[1] The find resulted in the biggest mining rush in Australasia this century. The new find was very rich and quantities of the precious metal were unearthed by lucky diggers.

I was one of the early rushers and mined until the following December, when I found myself with a worked-out claim. As all likely ground seemed pegged, there was nothing for it but to prospect new country. Finding W. Castle—an old-timer prospector—in the same position as myself, we decided to make a westward break to the Hamilton Range, some forty miles from the diggings. There were rumors of a big serpentine outcrop on its eastern fall, and to us that spelt possible metal. Osmiridium is shed by this intrusive rock.

Though then December—Antipodean summer-time—we knew the trip would be no picnic. Western Tasmania holds some of the roughest country imaginable. It is clothed with great rainforests interspersed with marshy buttongrass plains—waterlogged in even the driest season. It is, moreover, ridged with formidable mountain ranges, some of them over 4,000 feet in height. Throughout this wilderness many dangerous and swift-flowing rivers take their course. The waterfalls, snags and rapids in these make canoeing impossible; while marshes and scrub prevent packhorses being used. We therefore carried our outfit in "swags" strapped to our backs. Altogether we had four of these, each weighing upwards of 80 lbs. Several weeks' provisions, a tent, blankets, utensils and prospecting tools made up our kit.

We started soon after Christmas. Travelling was painfully slow. We plodded on till noon daily, irrespective of distance covered. Then dumping the swags we carried, we returned to our last bivouac to fetch up the other two. An advance of five miles a day thus entailed a journey of fifteen miles, ten covered with heavy loads.

Very often we did not progress so far. In stretches the scrub was like a dense wiry wall, from 6 to 20 feet high. To get through meant hacking out a passageway with axes and slashhooks. Tiny black leeches hung on the leaves, fastening themselves to us as we passed. We seldom knew of their presence on our bodies until the inner soles of our boots were slippery with our own blood. When gorged, they usually crawled down to the insides of our boots in an attempt to escape. The bites later set up intense irritation.

In the forest the going was terrible. So dense was the vegetation that the sun never penetrated. Everything was overhung with ghostly pennons of dead moss and bathed in eternal green twilight. Sometimes where trees had fallen, they had brought others down with them. Chaos resulted.

One minute we were crawling on hands and knees beneath underbrush and logs; the next—clambering over the fallen trunks of myrtle and eucalyptus. Some of the former were so

1. Osmiridium Mining in Tasmania. By P. Ormsby Lennon. ROCKS and MINERALS, March, 1931, Vol. 6, No. 1, Whole No. 19, pp. 1 - 6.

rotten than we often sank hock-deep in the decayed wood. This resembled brown jelly. Its stench was horrible and doubtless accounted for the swarms of great, hairy blowflies that forever pestered us with their attentions. Very often, these disgusting insects blew our blankets and clothes. Unlike the ordinary variety, their progeny are born alive as grubs.

Burdened as we were, my old mate and I found scaling tree-trunks gruelling work. These were commonly 8 or 10 feet high. Some huge trees abound in this wilderness. They have enormous girth and frequently attain a height of 200 feet—often more. We crossed many steep ranges and several tributaries of the Gordon River. Some of the latter often twisted so erratically that we found ourselves crossing the same one again and again. Often they were spanned by fallen trees which served as bridges; sometimes they were fordable. When otherwise impassable, we felled trees across them ourselves. Walking over tree "bridges" is risky. One slip and the swags on our backs would have dragged us to the bottom of the river. More than one Tasmanian prospector has lost his life this way.

On the journey we discovered a big hematite outcrop, which jutted out of the side of a hillside of schist; while by the Wedge River, some miles west of the diggings, we sank several prospect holes. Under 4 to 5 feet of wash (composed of quartzite, white quartz, sandstone and waterworn pebbles of a pink crystalline conglomerate) we bottomed on cheesy, pale green schist, much decomposed on the surface. There was also a great deal of black chrome sand. Our panning yielded us a couple of tiny colors of osmiridium and gold, but there was nothing in the locality to justify our remaining there. For miles around the Adams River diggings, similar prospects can be obtained, but such are not payable.

One night, as we slept, about 10 lbs. of our treasured bacon vanished. The thief was either a Tasmanian Devil or a marsupial cat. Still, we evened things by snaring occasional wombats and wallabies, the flesh of which came as a welcome change from the eternal bacon, johnny cakes and porridge. Prospectors rarely tote guns. The bush is so dense that shooting is next to impossible.

After 10 days of backbreaking toil, we reached the Gordon ford, where we intended crossing northward. But rain had set in, and the river was in flood and impassable. We accordingly pitched camp and did some local prospecting. Schist country again and no trace of mineral!

Rivers in the West flood after a few hours' rain, but they run down quick-

The Author in One of his Prospecting Camps

ly because of the drop in elevation as they approach the coast. In a couple of days the Gordon was nearly normal, so we resumed our march. Leaving some gear strung up under a pitched tent-fly, we reduced our burdens to one weighty swag apiece. Then each cutting a sapling to help us feel our way across, we plunged into the muddy, swirling torrent.

The river here was over 100 yards wide, and the ford itself a concave ledge of rock which ran obliquely from bank to bank. Big, waterworn stones filled its dip; while on either side, it sloped into deep pools. When about half-way across, I trod on a slippery boulder, missed my footing and went under with a mighty splash. The strong current immediately started rolling me towards deep water, and despite my struggles, the swag on my shoulders held me down. I owed my life to my good old mate. At great risk to himself, he splashed after me and grabbed at the end of a swag strap showing above the surface. Hauling hard on this, he managed to yank me to my feet. Then we fought across to the opposite bank and safety. After I dried myself and had a rest, we pushed on, toiling painfully over ranges of knife-edged schist hills, up and down deep gullies and over beds of horizontal scrub—the terror of prospectors.

This so-called scrub is only found on the damp sunless side of mountains. It is really a slender-boled tree which grows to a height of 60 feet or more. Becoming top-heavy, it bears down again, taking root anew and keeping up the vicious cycle. The result is a chaotic tangle of tenacle-like limbs, impossible to get through. We therefore had to climb monkey-fashion over the top, often at a height of 10 or 15 feet from the ground. We had to go warily, for many moss-covered branches were rotten and broke when trodden on. With a swag up, one seldom covers more than a mile a day in horizontal country.

At last, we reached our goal, the Hamilton Range. Gaunt and forbidding, it rose up like a wall, obscuring further vision westward. It was of schist, weathered white in patches, giving it the appearance of being covered with snow. We pitched camp on a marshy hill—the driest spot we could find—and got to work. But though we combed the district, we found no trace of serpentine rock, nor as much as a color of white metal. The rock which somebody had taken for serpentine was really a soft greenish schist, soapy to the touch. It bore a slight resemblance to serpentine, that was all. There was little or no alluvial wash in the creeks under the Range. The fall towards the Gordon

The Thumbs (3680 feet high) a Rugged Mountain in the Western part of Tasmania

A Prospector Panning for Osmiridium

was great, and in most places the water took its course over what was practically bare rock. The locality seems to have been the scene of great geological disturbance in the past, and we saw some remarkable sections of exposed faulting and contortion in the schist strata. We also prospected the Denison River which ran under the foothills and emptied itself into the Gordon, but found no trace of gold or osmiridium. We found a few specimens of iron pyrites here and there, as also some nice pieces of graphite, but the latter had evidently been carried down by a flood, and the parent body probably lay many miles upriver. Nowhere was there any sign of the black chrome sand so plentifully associated with osmiridium.

A Placer Mine in Tasmania

Prospectors Working an Osmiridium Claim in Western Tasmania

After a fruitless fortnight, we decided to make tracks back to Adams River. Our food was nearly out, and we were in rags—due to the wiry scrub. Had we known what was coming, we would have started earlier. The night before we intended leaving, there was a thunderstorm and heavy rain fell. By dawn it was still pelting down, and the Gordon had risen many feet. There was nothing for it but to wait.

It poured all day and the following night and the river still rose. We luckily snared a wallaby, which, spun out at a meal a day, lasted us three days. We had nothing else, as when the rain started, we only had a day's ration of bacon and flour left. The fourth day, we tightened our belts. Nor did we snare anything more. The rain seemed to drive all the game into the high country.

The rain at last died down to a steady drizzle, but the river kept high. We wandered miles, seeking a crossing, but without result. We even spent hours felling a large gum, seeking to drop its topmost branches on an island in midstream. There were other trees on the island, and we thought that by reaching it, we could fell another to the far bank and thus escape. But no such luck. Our tree, when felled, missed the island by some feet, and being hardwood, sank like a stone. Two foodless days of hard toil began to tell on us. We got weak and depressed, especially as we knew there was little chance of escape by the north-east of the Gordon. To go that way meant about a seventy miles' tramp through terrible scrub and without food. It might have taken us a week, and then there was no guarantee we could cross the river higher up. Even there it was a big river.

Swimming, too, was futile. The water was icy, and even if we escaped cramp, the swift current would have swept us into rapids, from which we could hardly hope to struggle. As a last resort we felled the only Huon pine we could find—the only Western Tasmanian wood that will float—deciding to make a raft. The rapids made our chances of escape this way very flimsy. Fortunately, before we took the gamble, the river fell, and by next evening, the ford was passable. Though the rushing waters touched our arm-pits at times, we won over.

All the food left in our depot was 4 pounds of flour and a handful of oatmeal. We quickly got on the out-

side of a big "billy" of gruel, but the meal made us very sick, owing to our having eaten nothing for so long.

The next morning we departed, and struck the field five days later. Needless to say, we finished up feeling very weak and sorry for ourselves. So ended an interesting but unprofitable prospecting trip in Tasmania's Wild West.

Some Non-Typical Quartz Varieties

By WILLIAM C. McKINLEY

Althought most common of minerals, quartz occurs, many times, in unusual and interesting varieties. Several definite specimens of such are herein described; perhaps quite a few students of mineralogy are familiar with these types, but the author feels sure that there are many other mineral-interested persons who have never come in contact with the following.

Amethyst is found, almost always, as clearly defined crystals—but less often does it occur as a **very common** gangue mineral in ore veins, as does this particular specimen from a silver-lead mine in Creede, Colorado. Here, amethyst has "grown" on the walls of the veins to form compact and very solid masses, though still retaining the outlines of definite crystal-forms. This phenomenon is an example of greatly extended crystallization in veins.

Another quartz specimen, likewise as interesting, is that of paralleled **massive** smoky-quartz, from Mt. Apatite, at Auburn, Maine. Paralleled **crystallization on crystals** is common, but a specimen of **massive** smoky-quartz, with partially-formed crystals protruding from one side of the mass, and grouped parallelly is not quite so common. A freak condition must have existed at the time of this mass's formation.

The comparatively flat lands of Illinois offer little to the seeker of beautiful minerals, but in the few pieces of silicified pink coral that has been uncovered, by the author, in and near Peoria, there is some pleasantness that is enhanced by a knowledge of the cause for the formation of such a pretty piece of "rock". These specimens have been found in glacial gravels, but have had their origin in another, probably more northern, locality. And this silicified coral was most probably a coral-limestone, before being attacked by heavily silica-laden waters, which, as a common metasomatic process, changed the whole mass of coral-limestone into coral-chalcedony: the pink color probably owes its origin to faint traces of an iron compound. And now, as a small, polished slab, this pink silicified coral helps fill in another gap in an **odd** gem collection!

Merry Christmas

and a Happy New Year to All Our Readers

Again it is the happy duty of ROCKS and MINERALS and its Editor, to extend to each and every one of our readers and friends, a MERRY CHRISTMAS and a HAPPY NEW YEAR.

May 1936 prosper each and every one of you abundantly, socially and financially is our sincere wish.

The Bolas De Plata Discovery of 1736

By RONALD L. IVES

There was great excitement in Papagueria in 1736. José de Messa had discovered a deposit of virgin silver at Arizonac, a Papago rancheria a short distance southwest of the present site of Nogales, Ariz.—Sonora. Miners, adventurers and the riff-raff of the frontier settlements of New Spain rushed to the site, and dug feverishly. Captain Anza, of Fronteras, the father of the founder of San Francisco, was sent to the site, and tried, rather ineffectually, to control the mad rush for wealth. In his various reports, and the writings of his son, we find the records of this great find.

Silver was found at, or very close to the surface in nuggets, or balls. According to the accounts, one nugget weighed 4,000 lbs, and nuggets of 500 pounds weight were said to be common. It is rumored that twenty muleloads of silver were sent to Mexico City as the King's fifth, and, according to legends prevalent in the area at the present time, another great quantity was "high graded" before the arrival of the military officers and taken to Tinajas Atlas, on the Arizona-Sonora border, south of Wellton, Ariz., where it was buried.

Captain Anza, the military authority in the district, was very much perplexed about the discovery, for if it was a mine, he was required to collect one fifth of the metal as the royal tax, while if it was a buried treasure, he should collect all of it for the King. He finally decided that it was a "criadero" or place in which silver grew. Therefore, he reasoned, all of it belonged to the King. The council of the Indes supported him in this view and approved his action in sequestrating such of the nuggets as he could.

Anza states that he had heard from men skilled in mining that there should be a mother-lode from which these nuggets came, and if this lode were found, the value would be even greater than the "Bolas" already discovered. In the meantime, he had sent the royal fifth to Mexico City on the orders of the council there, not knowing at the time that the council in Spain wanted the entire discovery.

Since 1736, the Arizonac placers have been worked over many times, for both silver and gold. Extensive prospecting has failed to disclose the mother lode, if there is such.

After removing the richest nuggets of silver, the Spanish abandoned the site, and went northward looking for the fabled mountain of gold in the northwest and the lake of quicksilver which was always "mas lejos" to the northward, passing in their futile search over the rich copper deposits at Bisbee and Globe and the silver veins of Tombstone.

Partial English Bibliography:—
Chapman, Chas. E.—"The Founding of Spanish California" p. 25.
Bolton, Herbert E.—"Anza's California Expeditions"—Vol. II, p 140.
Spanish Bibliography
Documents in Archivo General de Indias No. 177, 178 et als.
Documentos Para la Historia de Mexico—numerous references in general duplicates of the A. G. I. documents.
Ms. Expediente Vol. 13,974 British Museum, London. Copy in Acad. Pacific Coast Hist. C 177.
Local legends, for which the writer is indebted to Jose Galan, of Sonoyta, Sonora, and others.

The Crystal Peak Region Near Florissant, Colorado

By GEORGE M. WHITE

918 E. Boulder St., Colorado Springs, Colo.

About 35 miles north and west of Colorado Springs, Colorado, is the little town of Florissant. Fifty years ago it was the center of many logging camps, and when, a few years later, the Colorado Midland Railway pushed its way on through the South Park to the great mining camps of Leadville and Aspen, the little town enjoyed a mild boom period. With the passing of the railroad came also the end of the boom, and today only a handful of people remain there. Time and many changes, however, have not erased the scientific interest which once attached to the place, and the region around Florissant still attracts the geologist and mineralogist. Once the bed of a great Tertiary lake, the outskirts of the town yield interesing fossils. To the south a short distance is the famous petrified forest, while due north is located the great mineralized area known as the Crystal Peak region.

Crystal Peak itself is a sharply pointed mass of bare rock, over 9000 feet in altitude above sea level, standing about four miles north of Florissant. Continuing further north are found other peaks or rocky points extending irregularly toward the South Platte river, a distance of some five or six miles. On both sides of this ridge of peaks, extending some two or three miles, are rocky ridges and pine-covered slopes forming shoulders of the peaks. The country rock here is a coarse granite, and running through the granite are great pegmatite dykes, in which are found a large variety of minerals. Several ranches lie at the south and west slopes of the peaks, and often the farmer, in turning over the dirt for his potato fields, cuts through pockets of crystals. The region is quite accessible. Through Florissant runs the Pikes Peak Ocean to Ocean Highway, and from this highway, both at Florissant and at Lake George, a few miles to the west, good auto roads run back to the Gem Mines north of Crystal Peak.

There is a confusion of names applied to this region. Crystal Peak was known as Topaz Butte in the early days, and old reports on the area nearly always refer to it as such. The other lesser peaks, together with Topaz Butte, were called the Crystal Peaks. The mineralized area was known as the Crystal Beds of Topaz Butte, the Crystal Beds near Florissant, and the Crystal Beds back of Pike's Peak. Of recent years it has sometimes been referred to as the Gem Mines region. In many textbooks on mineralogy will be found references to the occurrence of smoky quartz, amazonstone, topaz, etc. from Pike's Peak, while collections throughout the country contain specimens so labeled. It is true that Pike's Peak itself has produced these minerals, but the quantity has been small indeed compared to what has come from the Crystal Peak region. Beyond doubt the majority of the material reputed to have been found at Pike's Peak actually came from near Florissant. Some of the early collectors in that region represented their finds as having come from Pike's Peak, no doubt in the hope that such a well-known source would prove of advantage in disposing of them.

The Crystal Peak region has been worked for more than 65 years. Prior to 1870 little is known of any finds, although it is likely that a few ranchers and collectors worked there. Early in the 1870's Dr. A. E. Foote of Philadelphia became interested in the locality. Under his direction a number of men systematically worked a large area, while others worked independently and sold specimens to him. During this period the production of fine crystals of amazonstone and smoky quartz exceeded anything found before or since. Nearly all of this material was sent back east to Dr. Foote's establishment. Mr. George

Reeser, an early settler and collector in the region, who still lives in Florissant, recalls that upon his first visit to the dinnings at Crystal Peak in 1874, there were 19 men working various pockets near the site of the present Gem Mines, at which place they had a camp. Mr. Reeser has worked this area at intervals during all these years and has procured many fine specimens. In the early '80's an old prospector by the name of Thiebaud settled on a homestead southwest of Crystal Peak. He lived there for many years with his family, cutting timber, tending the ranch, and all the while uncovering fine mineral specimens. Some of his finds were superior to anything that ever came from the region. About 1908, A. B. Whitmore settled on some of the old workings north of Crystal Peak and established the Gem Mines. A corporation, known as the Crystal Peak Gem Company, was organized to hold and develop the several claims being proved up. Although the old pockets were worked over and several new ones opened, very little choice material was produced at the Gem Mines, in comparison with earlier results. Mr. Whitmore, now past 80 years of age and no longer able to develop his claims, still lives the life of a hermit in his cabin and each year acts as genial host to the hundreds of tourists who visit his unique display.

No mineral found at Crystal Peak has occurred in finer quality than the variety of microcline known as amazonstone or amazonite. In the clearcut perfection of its crystals and fine color these specimens are outstanding, and it is doubtful if better ones are produced anywhere. It has been found in abundance in several large pockets over a considerable area. The crystals occur singly and in clusters, often being associated with smoky quartz and other minerals. The color varies from a light green to the deepest blue green. Several years ago a pocket of "white-caps" was taken out. The lower portion of the crystal was of a good green color with the upper part white. Much of the amazonstone is stained and coated with a film of iron oxide which requires boiling in dilute acid to thoroughly clean them. In addition to the simple form of crystals, excellent twins of the Baveno, Carlsbad and Manebach types have been found, often in large clusters. Much of the better colored material has been used for cutting.

A large amount of fine smoky quartz has come from this locality. The quality varies from opaque to the finest grade of clear, gem-like, black crystals. Generally the crystals taper to a point, although well developed prisms are often found. Doubly terminated crystals are not common. As a rule the crystals are found in the pockets lying loose or on a matrix of feldspar. As in the case of the amazonstone, it is often necessary to boil the smoky quartz in acid to remove the iron coating. A rather common characteristic of the quartz crystals from this locality is the covering of the broken end of the prism with a number of crystal faces, and in some cases secondary growths of quartz complete the missing termination. The association of the smoky quartz crystals with other minerals form interesting combinations. In conjunction with the green amazonstone or white feldspar, the black crystals are set off in attractive manner. And a multitude of queer combinations is also to be observed. I have seen crystals of quartz penetrating cubes of fluorite, attached to rounded masses of goethite, and often grouped with three or more different minerals in odd forms. Mention should be made of the variety of quartz known as onegite which consists of the quartz crystals with inclusions of goethite. Colorless crystals are sometimes found, and very rarely, some having an amethyst tint. There have been some very large crystals produced. One of the old "tales" of the region concerns a crystal of smoky quartz reputed to have been over four feet long and weighing about 250 pounds. After refusing $500.00 for the find, the collectors were said to have shipped the big crystal east, where it somehow became lost, with the result that the finders realized nothing from it.

Fluorite is another mineral well represented at Crystal Peak. It has been found quite abundantly in the pockets producing topaz, phenacite, quartz and amazonstone. The mineral usually occurs as well crystallized cubes or rough cleavable masses. Generally the fluorite is colorless or light green, although some specimens of beautiful blue and purple shades have been found. Groups

of crystals weighing over 20 pounds have been produced.

In addition to the amazonstone, feldspar of fine quality is quite common. White and brownish colored crystals have been found in large groups and with many associations. The three types of twins mentioned in connection with the amazonstone are also found in the feldspars, some groups showing two or three of these different types together. Albite is also abundantly found in the pegmatite pockets, occurring in small, thin, tabular crystals of white or brown color, associated with feldspar and amazonstone.

Hematite occurs as a coating on quartz and feldspar and in masses, but not in good crystals. Limonite pseudomorphs after siderite are very common, being found in good crystals and in association with other minerals. The best specimens of the iron group to be found here are goethite. This variety is found abundantly and in beautifully crystallized groups of sheaf-like, radiating crystals.

Although it may have been found at an earlier date, there is no record of the occurrence of topaz at Crystal Peak prior to 1884. About 1885, articles by W. E. Hidden[1], and by Whitman Cross and W. F. Hillebrand[2], give a very interesting description of this mineral and of the phenacite which was found with it at the time. From these articles and one written in 1887 by Walter B. Smith[3], I have secured much of the information summarized in these notes on topaz and phenacite.

The first topaz identified from this region was found at the main amazonstone locality about 1884 and was of importance mainly on account of the enormous size of the original crystal, of which it was but a corner. This fragment was 3½ inches in its longest diameter, and if the other faces had been developed proportionally, the complete crystal must have been nearly one foot in diameter. The crystal was clear in parts and of a decided greenish color. The original collectors thought it to be fluorspar, and the other pieces of the crystal were undoubtedly lost. A few months later another discovery of topaz was made on one of the slopes on the west side of the peak. In this case several hundred crystals were found, as well as the first phenacite from the locality. The topaz crystals, varying in size from minute to over two inches in length, were found deposited on, or partially embedded in amazonstone, albite, or limonite pseudomorphs. They were deposited on different faces of the microcline, singly or in groups, and were attached in all positions, so that many were well terminated at both ends. Many single crystals were obtained in addition to the matrix specimens. Nearly all crystals were obtained in addition to the matrix specimens. Nearly all crystals displayed a prominent development of the brachydome. Generally the crystals were colorless, although some of greenish tint were found. Many of the topaz crystals from this locality are fractured, with iron oxide stain penetratinng the crystal. Nearly all show etched pyramids, and often interesting faces are to be observed. The first discoveries were doubtless made by Thiebaud and at least three pockets have yielded specimens. These pockets are on the west side of the peak, and none have ever been reported from the east side, although the formations and associations are the same.

The phenacites found at Crystal Peak in 1884 by Mr. Thiebaud followed closely the first discovery of this mineral in the United States a few years before by Mr. Thiebaud near Specimen Rock, south of Manitou. Being associated with topaz, often side by side on the same specimen, the phenacites were considered to be minute topaz crystals until brought to the attention of Mr. W. E. Hidden. In the pockets with the phenacites were found crystals of topaz, quartz, microcline, albite, fluorite, columbite, biotite and limonite pseudomorphs. Many of the crystals are of microscopic size, but specimens averaging 1 to 5 mm. have been found. The largest phenacite found in the locality was a rough crystal about 15 mm. in diameter. The form of the crystals is lenticular, with the rhombohedron predominating. They have been referred to locally as "cartwheels." Usually they are colorless, although some entirely embedded in matrix show a faint wine color. A development of several new faces has been noted as well as a general similarity in form with phenacites from the Ilmen Mountains in the Urals. Generally the crystals occur slightly attached to or partially embedded in the amazonstone, albite, or smoky quartz.

and some have been observed in the interior of quartz crystals. At the main phenacite locality some of the old collectors even screened the contents of the pockets to obtain the single crystals which had become detached from the matrix.

Among the other rare minerals from the region should be mentioned columbite, which has been found in well defined crystals, both singly and in matrix. Zircon and bastnasite have both been reported from the area, but it is the opinion of local mineralogists that these minerals were not found at Crystal Peak but in the vicinity of St. Peter's Dome, near Colorado Springs. Mr. Thiebaud worked at both localities. Allanite and cassiterite have been reported but in very small quantities. Celestite has also been named as one of the rare minerals found at Crystal Peak. This is doubtlessly an error, as the mineral is found in sedimentary rocks and no such formation exists in the immediate vicinity of Crystal Peak. Several years ago, on one of our many trips to Crystal Peak, Mr. Willard Wulff and I found in one of the old abandoned cabins near the Thiebaud ranch a large quantity of fibrous celestite. Doubtlessly Mr. Thiebaud collected this material north of the Garden of The Gods, where it occurs in abundance, and hence arose the misunderstanding as to its source.

Naturally the question arises as to the opportunities for the collector at Crystal Peak today. Have all the good pockets been developed, and is the locality stripped of minerals, as some contend? The old collectors who have worked in the region for years do not think so. From personal experience I am confident that well directed effort would be rewarded. Even on one day trips to the region during the past several years I have obtained good specimens of all the minerals which occur there in any quantity. Last summer some local men took out a fairly large pocket of goethite, which equalled in quality anything ever produced. During the past fifteen years there has been very little done in the way of development work as compared to the efforts of earlier collectors. It is to be hoped that the future will see a production of minerals from the region at least somewhat comparable with that of the past.

1. W. E. Hidden—*American Journal of Science*, Volume 29, 3rd Series—1885 Pages 249 - 250.
2. Minerals from the Neighborhood of Pike's Peak—by Whitman Cross and W. F. Hillebrand. *U. S. Geological Survey Bulletin* 20—1885.
3. Notes on the Crystal Beds of Topaz Butte—by Walter B. Smith. *American Journal of Science*, Volume 33, 3rd Series—Oct., 1887; Pages 130—135, inclusive.

Jasper Beach, Near Machias, Maine—A Locality for Fine Jasper Pebbles

Why Collect Rocks and Minerals?

By S. C. BROWN

For at least forty years, I have been keenly interested in hobbies of one kind or another. Like most school boys, I started with a stamp collection, and now have over 3000 foreign and domestic stamps. The collecting of post marks, following closely that of stamps was soon dropped after obtaining many counterfeit denominations.

I then decided to abandon indoor hobbies in favor of an outdoor pastime and became interested in the common woods and leaves of my section, of which I now have quite a collection. The collecting of Indian relics was another delightful outdoor hobby but it was not wholly satisfactory as many so called relics, especially arrowheads, were manufactured by the "ignoble white man." This, of course, would not apply to the relics acquired by one in field explorations.

I next collected several hundred fossil specimens but unless one resided in a locality with a sedimentary rock formation, it is rather expensive to travel for any distance to obtain specimens.

My interest in mineralogy was first aroused when my teacher, a graduate of Yale Sheffied School and a student of that noted geologist and mineralogist, Professor Dana of Yale University, presented a lecture on minerals, supplemented by specimens from his collection. I attended many trips to mines and quarries with this pedagogue and formed "the habit or hobby" and at this time it appears to be lasting.

There are many advantages which the collecting of rocks and minerals has over that of other hobbies. First, it is possible to avoid imitations. An ardent collector who has made a study of his collection can, by careful determination, be almost certain of their composition and should know, when, where and the conditions under which he acquired his specimens. Second, it is inexpensive. Rock and Mineral collections may, however, be made quite expensive if one purchases rare and polished gems, large groups of crystals and some of the rarer ores, but to the earnest hard-boiled collector who in these times has not been blessed with plenty of the world's supply of gold, this problem will not interfere, as from time to time he may omit his usual allowance of cigarettes or cigars, and purchase a few inexpensive specimens, or exchange some of his duplicates with another rock hobbyist. However, I prize far more, the specimens that have been secured on the numerous trips to mines and quarries, than the fine gemmy and polished groups which were purchased.

Third, it is practical. In these days of keen competition in the professions and trades, especially in the sciences as chemistry, geology, mineralogy and metallurgy, this hobby will give the student a great deal of practical knowledge. Some years ago I was approached by a young man who had recently graduated from the local high school, as to the college course he should take in order to prepare himself for his life vocation. This young man was intensely interested in mineral collecting. Consequently I mentioned mining engineering. After talking this over with his parents, he in due time enrolled as a student in that profession at a prominent university and later graduated with honors.

Fourth, it is healthful. As an aid to health and recreation there is no better hobby than hiking out into the hills to visit numerous mines and quarries with an enthusiastic group of "rock fiends." Age in mineral collecting is not recognized. There are plenty of men on the downward slope of fifty years, that you will meet on many of these interesting trips.

I have mentioned members of the male sex as ardent collectors, but I have met plenty of women, especially school teachers, on these trips and have found them to be very enthusiastic and deeply interested in this hobby.

THE AMATEUR LAPIDARY

Conducted by J. H. HOWARD*

504 Crescent Ave., Greenville, S. C.

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all.

*Author of—*The Working of Semi-Precious Stones.* A practical guide-book written in non-technical language for those who desire to cut and polish semi-precious stones.

"Odd Notes From the Shop"

By R. EMMET DOHERTY

Glycerine makes an excellent substitute for oil when using the mud type saw. The glycerine has a high specific gravity which easily supports the grains of abrasive and being of an oily nature, acts as a lubricant.

The glycerine is instantly soluble in water and eliminates the necessity of having gasoline, a dangerous fire hazzard, on hand to disolve the oil mud mix. The only word to be said against glycerine for use on the mud saw is that it heats up a trifle more rapidly than water or oil, but in general cleanliness it is a time saver.

This type of glycerine may be obtained in any drug store and is not to be confused with the diluted varieties sold for auto radiators. It is rather expensive, but as it does not evaporate, or change consistency with use, it is really economical.

Among some of the odd things cut by the author was a six inch intestinal stone, taken from a horse in an operation by the local veterinarian. Because this lime formation was called 'stone' the doctor believed it would polish, and surprising enough, it took a beautiful polish showing concentric rings of leather brown and tan, each ring about one-eighth inch apart. Specimens of this soft nature require a protective coating after they are polished, to keep them from precipitating a white powdery substance. Any varnish, shellac or Sodium Silicate will serve this purpose.

Mineral Oddities

The Cryptozoons from the "Petrified Gardens" at Ritchie Park, Saratoga Springs, N. Y., are found on the reefs of the Cambrian Sea, 600 million years old, and are recognized as the first vegetable life on the face of the globe. These petrified formations are called "cabbages" and are shaped as such. While the writer was sawing several of these Crytozoons, a distinct odor of stale cabbage permeated the shop, caused by the high speed of the Redmanol saw which was traveling about four thousand revolutions a minute. This is believed to be the oldest odor on record. R. EMMET DOHERTY.

Famous Mineralogist Gives Lecture

By MURIEL J. DOHERTY

On Sunday, November 17th, at 4 o'clock, the mineralogists of Peekskill, N. Y., had the pleasure of having James G. Manchester talk to them on "The Story of Minerals." He first explained the geological formation of the fifty mile area surrounding New York City and then proceeded to describe the minerals coming from famous mines and quarries in the locality. He had brought with him 105 slides, most of which were colored, and as these were flashed on the screen many times the original size of the actual specimens, the audience had a very definite chance to learn about the minerals. Some of these slides are half-tone illustrations in Mr. Manchester's book "Minerals of New York City and its Environs." However, seeing them in color was a treat, and as most of these specimens were personally collected by Mr. Manchester, he was able to give an interesting history of each.

The audience laughed to hear him describe one expedition of his to obtain the Oligoclase Crystal shown on plate No. 39 of his book. He had seen the specimen on a Saturday afternoon in the excavation at 161st Street in the heart of Manhattan, but did not have time or equipment to get it at the time. It snowed during the night, and completely covered the exposure of rock. The people living in that neighborhood were surprised the next morning to see a distinguished gentleman rapidly brushing away the snow with a whisk broom, and then breaking out chunks of rock. His zeal was rewarded by obtaining an excellent crystal example of this mineral.

The Natrolite of Plate No. 74 was collected on a Saturday afternoon at Paterson, N. J., many years ago, from a pocket in the trap rock. The other half of this Natrolite group finally reached England and is now on display at the British Museum.

After the metropolitan area had been covered, minerals from internationally known localities were displayed. Beautiful Sulphur Crystals from Sicily, Labradorite from Labrador and Malachite from Russia were among the slides shown. A purple Apatite Crystal found many years ago at Mt. Apatite, Maine, had been offered to Mr. Manchester for $500.00, but he considered it too expensive. It was eventually purchased by Mrs. Roebling for her husband's birthday. The Crystal is now in the National Museum at Washington along with the rest of the Roebling collection.

Mr. Manchester also brought an iron arc and a selection of Fluorescing minerals. To those of the audience who had never seen such an unusual change of color, the exhibition was astonishing. To those familiar with this phenomenon of light, the display was very satisfying, as the minerals were fine examples of their types.

The lecture was nearly two hours long and was both entertaining and instructive to all attending. The only blot of the day was due to the weather, as Peekskill had its first 'blizzard' of the year. The snow and sleet proved to be too much of a drawback to most of the people, and so the attendance was much smaller than the committee had hoped for. The lecture was held at the Auditorium of the Peekskill High School under the direction of ROCKS and MINERALS.

Acknowledgments

We wish to acknowledge receipt and express our sincere thanks for specimens and other donations recently sent us by some of our subscribers.

Brauer, F. R., Richmond, Va.—Three fine amazonstones from Amelia County, Va.

Montague, S. A., Portland, Conn.—A dainty little crystallized lithiophilite from Strickland quarry, his city, and a fine specimen of iolite from Guilford, Conn.

Rordell, C. J., Salt Lake City, Utah—Two fine specimens of molybdenite from the Utah Copper Mine, C level Bingham, Utah; also a very fine picture in color of the famous mine.

The Book of Minerals

By Alfred C. Hawkins, Soil Expert, Soil Conservation Service, U. S. Department of Agriculture.

John Wiley & Sons, Inc., N. Y., xii, 161 pp. $1.50

Reviewed by H. ALBAN ANDERSON

So many books on mineralogy are coming from the press that one is inclined to ask if they are printed to meet the demand of an awakened interest, or if the books themselves are responsible for an expanding interest already stirred up by ROCKS and MINERALS and by the short introductory courses in high schools, for which many of the schools take ROCKS and MINERALS as background for their students. The query becomes more pertinent as one reads "The Book of Minerals," by Alfred C. Hawkins, lately issued by John Wiley & Sons, Inc., New York, and Chapman & Hall, Ltd., London, England. For here is a book quite different from its predecessors. It is in no sense a text book. The author disclaims this in his "Foreword," by announcing that his purpose is "to tell the story of the minerals." In doing this he has stripped his narrative of all technicalities, and refers his readers to a well selected bibliography of elementary and advanced treatises on mineralogy for all such information.

The author's style reminds one of the persuasive lecturer seeking to make an audience as enthusiastic over his subject as he is. But since popular lectures are somewhat out of date, let us say the book serves the purpose of an intelligence test, whereby the reader may discover for himself his capacity, or his inclination, to make mineralogy a hobby or a vocation. Failing in the test, the reader will at least have acquired sufficient knowledge to appreciate the fact that a museum exhibit of minerals is something more than a mere collection of stones, and that in itself would be gratifying to Mr. Hawkins.

The informal manner of leading up to the section on description of species, is indicated by chapter headings: "I. Some Facts about Minerals" "II. For Those Interested in Minerals." "III. Methods of Making Unknown Minerals Disclose Their Identity." "IV. Finding Minerals." Thus briefly are we conducted to the "Description of Mineral Species," in which the author (again quoting from his Foreword) "takes up only the very important minerals, most of which furnish products which we use daily, or which give us gem stones, or something else that we know about. For further information about these or other minerals, you can consult the books listed in the bibliography, page 149."

The book, therefore, seems to answer both alternatives of our question and to go beyond it. The author is writing not so much to meet a demand as to create an interest, especially among those who desire only to acquire an appreciation, or some simple information that will make stones and rocks interesting for them. Quoting from the text, page 43, where, in a sense, he lays bare what has been nearest his heart in writing the book, Mr. Hawkins says: "Many people who come to see a mineral collection ask to see the gold and the diamonds, and then go on to look at some other department of the institution. That is because they have not been educated to understand the beauties of the more common mineral species. . . . It is with the hope of increasing, however slightly, the number who are interested in our mineral wealth, that this book has been written."

The book is well illustrated.

A PEEK AT OUR MAIL

Can't Wait For His Copy!

Brunswick, Maine.—Enclosed please find payment for a copy of Bulletin No. 1. ROCKS *and* MINERALS is a great magazine and I look forward to its arrival every month. It doesn't get here soon enough for me.—*Adrian B. Mather.*

Praise For Bulletin No. 2

Cobb, Lake Co., Calif.—The bulletin, "How to Collect Minerals" arrived in response to my two year renewal subscription to "ROCKS *and* MINERALS." I want to tell you how much I appreciate receiving this splendid booklet. It is the most complete, interesting and helpful publication for its purpose of anything I have ever seen. May I congratulate you on your fine piece of work. I am enclosing check for two additional copies to be used as Christmas gifts.—*John M. Lee.*

Finds It Worth While

Norfolk, Va.—The article on Amber, by Jonathan M. Blair was written in a way that I hope to see other minerals described. I would like to say to the Editor of "ROCKS *and* MINERALS", that I do appreciate his efforts in giving us a really worth while magazine.—*Otto Hellmich.*

Of Special Interest To Him

Petaluma, Calif.—I am enclosing check for my renewal to "ROCKS *and* MINERALS" and just wanted to tell you how much I enjoy your magazine. I have been a subscriber for almost 7 years now, and have read every magazine from cover to cover many times. At present I am attending the University of California and am majoring in mineralogy. So of course your magazine is of special interest to me.—*George Switzer.*

Reads It All!

Boston, Mass.—Please note change of address. I do not want to miss any copy because I shall bind them soon. I have always found ROCKS *and* MINERALS a most interesting publication and read everything in it.—*Gunnar Bjareby.*

Leads Them All

Penland, N. C.—I am enclosing payment for which please renew my subscription for another year. I wish to compliment you on the interesting material which has appeared in "ROCKS *and* MINERALS" for the past several months. Your magazine is leading in its field now and is improving every month, in my opinion.—*Bradley Johnson.*

Collector's Kinks

Collectors are cordially invited to submit notes from their experiences and so make this department of interest to all.

By R. Emmet Doherty

A very low priced water-proof cement which will hold on polished surfaces is Sodium Silicate or Water Glass. This material costs but twenty cents a pint and is excellent for cementing labels to smooth or rough surfaces. The Water Glass is applied to the specimen first, then the lettered label of medium white paper is put on with a coating of the Water Glass on top. It dries in a few minutes and makes a hard water-proof label that will stand a lot of handling and rough usage without effecting any of the lettering. Use a medium or heavy grade of paper for the label as a too thin paper will absorb the Water Glass and become illegible. A brush can be used to apply the liquid, but care must be taken to keep the brush in water between applications as it will harden in a short time. After the final specimen has been labeled, the brush can be washed and dried and will be ready for use the next time. Care should also be taken to put the cover back on the can tightly to avoid evaporation.

Club and Society Notes

The Upper Darby Junior High School Mineral Club, Upper Darby, Penn. has recently been formed under the direction of J. K. Fisher and consists of 18 boys and 2 girls. The Club would be delighted in corresponding and exchanging mineral specimens with mineral clubs in high schools of other cities.